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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOK KET NO.	CONFIRMATION NO.
09/942,405	08/30/2001	Prentice Lee Huffines	TK3615USNA	8575
23906	7590	06/01/2004	EXAMINER	
E I DU PONT DE NEMOURS AND COMPANY LEGAL PATENT RECORDS CENTER BARLEY MILL PLAZA 25/1128 4417 LANCASTER PIKE WILMINGTON, DE 19805			TORRES VELAZQUEZ, NORCA LIZ	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 06/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
09/942,405	HUFFINES ET AL.	
Examiner	Art Unit	
Norca L. Torres-Velazquez	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,7,9,11,12,14,16,17,19,20,22,24,26,28,30,32 and 34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,7,9,11,12,14,16,17,19,20,22,24,26,28,30,32 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Response to Arguments

2. Applicant's arguments with respect to pending claims and the limitation in original claim 3 have been considered but they are not persuasive.

- a. Applicants argue that original claim 3, now incorporated into claim 1 by amendment, has never been rejected over prior art and the entry of the amendment is proper since not all claims were addressed in the outstanding Office Action. Further, Applicants reiterate their comments in traverse of the rejections as applied to Carroll et al., Drelich and Zimmerman et al. as previously set forth in the last response.

The Examiner has Applicants remarks with regards to original claim 3, which is addressed in the present office action. With regards to the prior art of Carroll et al., Drelich and Zimmerman et al., the Examiner maintains her position that the art is analogous as it pertained to claim 1 prior to the inclusion of the limitation of original claim 3. With regards to the currently amended claim 1 incorporating the limitation "a second moisture vapor permeable nonwoven layer adhered to the second side of the film, wherein said second nonwoven layer is not a powder-bonded layer"; it is noted that Carroll et al. in one of their embodiments (Fig. 2) provides a laminate structure with two nonwoven layers and an intermediate film layer. While Carroll et al. does not teach the use of powder bonding of the nonwoven layers, it is the Examiner's position that having

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one of the layers powder-bonded as the nonwovens taught by Drelich would have been obvious when properties such as hand, drape, flexibility, absorbency, and the like are desired, while at the same time providing strength to the layer. It is further noted, that the Examiner is not bodily incorporating the nonwoven material of Drelich into Carroll et al., but providing the use of powder-bonding in nonwoven layers to provide with the properties taught by Drelich above.

b. Further a new rejection is stated over LIM et al. (US 6,187,696 B1) in view of DRELICH below.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4, 9, 11, 14, 16, 18-19, 20, 28, 30 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over CARROLL et al. (WO 97/45259) in view of DRELICH (US 2,880,113).

CARROLL et al. discloses sheet materials used in making medical drapes, medical gowns, and absorbent articles, such as diapers and sanitary napkins. (Page 1, lines 18-20). The reference discloses a moisture vapor permeable, substantially liquid impermeable composite sheet material comprising a fibrous substrate and a moisture vapor permeable thermoplastic film layer. The fibrous substrate is comprised of at least 50% by weight polyolefin polymer fibers. The moisture vapor permeable thermoplastic film layer is melt bonded directly to the one side of

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the fibrous substrate. Preferably the film layer of the composite sheet has an average thickness of less than 50 microns and is comprised of at least 50% by weight of polymer selected from the group of block copolyether esters, block copolyether amides, polyurethanes, and combinations thereof. The reference further teaches that the sheet is also substantially free of micropores (monolithic). The reference further teaches that the film may be bonded between two fibrous substrates. (Page 3, lines 23-38 through Page 4, lines 1-12)

The substrate may be a woven or nonwoven structure with the nonwoven being preferred. (Page 6, lines 30-31) A particularly preferred nonwoven material for the fibrous substrates 14 and 16 is a fibrous polyolefin nonwoven web. Suitable polyolefin materials include polypropylene and polyethylene spunbonded webs, scrims, woven slit films, carded webs, flashspun webs, and woven or nonwoven sheets comprised of blends of polyolefin fibers or of polyolefin fibers and other fibers. The webs of polyolefin fibers can be made with a variety of desirable properties, including good vapor permeability, flexibility, softness and strength. (Page 7, lines 30-36) The reference further teaches that the composite sheet 10 is prepared by an extrusion coating process. (Page 9, lines 13-14) CARROLL et al. further teaches that if the polymers of the film layer 12 and the substrate 14 are chemically compatible, the polymer of the film layer will wet the polymer of the fibers to a greater extent, which, in turn, improves physical bonding between the layers of the composite sheet. Making the polymers of the moisture permeable film layer and the fibrous substrate more compatible also increases the level of chemical attraction between the layers of the composite sheet. The preferred polyether block copolymer moisture permeable films are compatible with ester-based fibrous substrates, such as

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polyester webs, and thus adhere well to polyesters. (Page 17, lines 3-14) The reference further teaches the use of the composite sheet as a backsheet in a garment. (Page 24, lines 25-27)

The use of a nonwoven web of fibers, wherein greater than 95 weight percent of the fibers of the nonwoven web are compatible with the polymeric film would have been an obvious result-effective variable in view of CARROLL et al.'s teachings above.

The reference teaches that the composite sheet material of their invention is capable of delivering an MVTR of at least about $1500 \text{ g/m}^2/24 \text{ hr.}$ (Page 12, lines 2-30).

With regards to the bond strength between the second nonwoven and the film, it is noted that the CARROLL et al. reference teaches the importance of physical bonding between the film and the substrate layers in the composite sheet and also the importance of the chemical compatibility of the materials (as disclosed above), therefore, a bond strength of at least 50 grams/inch would be an obvious result of the CARROLL et al. teachings. CARROLL et al. discloses a laminate with an intermediate film layer between two nonwoven layers.

However, CARROLL et al. fails to teach the use of powder bonding in one of the nonwoven layers.

DRELICH teaches fibrous nonwoven fabrics and teaches their use in applications such as surgical dressings. The reference teaches the use of powder binders to form a multiplicity of relatively small granule bonds of heat-fused material in the nonwoven. The bonds preferably are formed in the fabric by distributing heat fusible granules substantially uniformly, yet at random, in the fibrous layer, and then fusing them to cause them to flow into or through the thickness of the layer to imbed a relatively large number of fibers. The granules are fused and caused to flow by the application of heat and pressure to form strong bonds, which surround and anchor the

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fibers. In general, the binder members proposed have been of the same order of size as the fibers to be bonded and in the form of powder or a similar state of fine division. (Column 2, lines 25-42) DRELICH further teaches that in the fabric of their invention the bonds are spaced sufficiently apart to allow the structural fibers to predominate in determining hand, drape, flexibility, absorbency, and the like. (Column 2, lines 59-63)

Since both CARROLL et al. and DRELICH are from the same field of endeavor, they are both directed to nonwoven fabrics, the purpose disclosed by DRELICH would have been recognized by CARROLL et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the composition or laminate of CARROLL et al. and provide it with at least one powder-bonded nonwoven web with the motivation of enhancing the textile-like qualities of the fabric properties such as hand, drape, flexibility, absorbency, and the like are desired, while at the same time providing strength to the layer as disclosed by DRELICH (Column 2, lines 70-71).

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over CARROLL et al. in view of DRELICH.

It is noted that the prior art of reference is silent with respect to the claimed viral barrier test. However, it is reasonable to presume that the claimed property is inherent to the invention of CARROLL et al. in view of DRELICH. Support for said presumption is found in the use of the same starting materials (i.e. non-porous film with a powder-nonwoven sheet), like processes of making the articles (i.e., extrusion coating), and the production of similar end-products (i.e., moisture vapor permeable composite sheets, etc...). The burden is upon the Applicant to prove

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otherwise. *In re Fitzgerald*, 205 USPQ 594. In the alternative, the presently claimed function of viral barrier would obviously have been provided as a result of the inventive composite of the CARROLL et al. reference. *Note In re Best*, 195 USPQ 433.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over CARROLL et al. (WO 97/45259) in view of DRELICH (US 2,880,113) as applied to claim 1 above, and further in view of ZIMMERMAN et al. (US 4,845,583).

While CARROLL et al. teaches that suitable polyolefin materials for the nonwoven web layer include polypropylene and polyethylene spunbonded webs, and DRELICH teaches powder-bonded nonwovens; the prior art of reference fails to teach that use of poly (ethylene terephthalate), poly (1,3-propylene terephthalate) and copolymers thereof in the powder-bonded nonwoven layer.

ZIMMERMAN et al. teaches the use of powder bonded nonwoven fabrics as liners for jackets for retaining "floppy" diskettes or disks. (Abstract) The reference teaches that by using a powder bonded nonwoven fabric, improvements in lamination around cutouts in the diskette or disk jackets or cartridges, and in cleanliness are achieved. (Column 4, lines 1-4) The reference teaches the use of polyethylene terephthalate fibers for making the nonwoven fabrics. (Column 4, lines 51-56)

Since CARROLL et al., DRELICH and ZIMMERMAN et al. are directed to nonwoven fabric constructions, the purpose disclosed by ZIMMERMAN et al. would have been recognized in the pertinent art of CARROLL et al. and DRELICH.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the powder-bonded nonwoven layer and provide it with

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polyethylene terephthalate fibers as an alternate fiber to the ones taught by CARROLL et al. with the motivation of improving the lamination and fiber retention of the fabric as disclosed by ZIMMERMAN et al. (above).

7. Claims 20, 22, 24, 26 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over CARROLL et al. in view of DRELICH as stated above.

It is noted that the claimed protective cover for automobiles, the housewrap, the roof liner and the clean room garment include all the structural limitations taught by the prior art of reference as stated above. The claimed products are preamble limitations, and no further structural limitations are claimed. Therefore, claims 20-27 and 32-33 are rejected as stated above.

8. Claims 1, 4, 7, 9, 11-12, 14, 16, 18-20, 22, 26, 28, 30, 32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over LIM et al. (US 6,187,696 B1) in view of DRELICH (US 2,880,113).

LIM et al. is directed to moisture vapor permeable, substantially liquid impermeable composite sheet structure useful in apparel, surgical drapes, sterile wraps, packaging materials, protective covers, construction materials, and personal care absorbent articles. (Column 1, lines 5-10) The reference teaches a composite sheet (shown in Figure 2) that comprises a moisture vapor permeable film layer 12 with two fibrous substrates 14 and 16. The reference teaches the use of block copolyether esters in the film layer and that the substrate may be a woven or nonwoven textile structure. The reference teaches the use of polyolefin materials in the fibrous substrates and that these can consist of spunbonded webs, flashspun webs. (Column 5, lines 2-44) It teaches the use of polyethylene terephthalate in the nonwoven webs. (Column 5, line 59)

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Further, the reference teaches that the film layer is nonporous (i.e. monolithic). (Column 6, line 25) And teaches moisture vapor permeable films of less than 25 microns. (Column 6, lines 57-60 and Column 8, line 65) The reference also meets the moisture vapor permeability when it teaches values of at least about $1500 \text{ g/m}^2/24 \text{ hr}$. (Column 11, line 45)

However, LIM et al. fails to teach the use of a powder-bonded nonwoven layer.

DRELICH teaches fibrous nonwoven fabrics and teaches their use in applications such as surgical dressings. The reference teaches the use of powder binders to form a multiplicity of relatively small granule bonds of heat-fused material in the nonwoven. The bonds preferably are formed in the fabric by distributing heat fusible granules substantially uniformly, yet at random, in the fibrous layer, and then fusing them to cause them to flow into or through the thickness of the layer to imbed a relatively large number of fibers. The granules are fused and caused to flow by the application of heat and pressure to form strong bonds, which surround and anchor the fibers. In general, the binder members proposed have been of the same order of size as the fibers to be bonded and in the form of powder or a similar state of fine division. (Column 2, lines 25-42) DRELICH further teaches that in the fabric of their invention the bonds are spaced sufficiently apart to allow the structural fibers to predominate in determining hand, drape, flexibility, absorbency, and the like. (Column 2, lines 59-63)

Since both references are directed to nonwoven materials used in similar applications (such as surgical drapes), the purpose disclosed by DRELICH would have been recognized in the pertinent art of CARROLL et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the composition or laminate of CARROLL et al. and provide it

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with at least one powder-bonded nonwoven web with the motivation of enhancing the textile-like qualities of the fabric properties such as hand, drape, flexibility, absorbency, and the like are desired, while at the same time providing strength to the layer as disclosed by DRELICH (Column 2, lines 70-71).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 571-272-1484. The examiner can normally be reached on Monday-Thursday 8:00-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Norca L. Torres-Velazquez
Examiner
Art Unit 1771

May 25, 2004



ELIZABETH M. COLE
PRIMARY EXAMINER